

***United States Court of Appeals
for the Second Circuit***

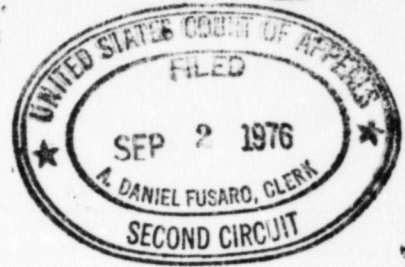


**APPELLANT'S
REPLY BRIEF**

76-7063

UNITED STATES COURT OF APPEALS

SECOND CIRCUIT



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Digitronics Corp., Now Amperex :
Electronic Corp., :

Plaintiff-Appellant-Appellee, :

v. :

The New York Racing Association, Inc., :
Automatic Totalisators (U.S.A.) LTD., :
Automatic Totalisators LTD., and :
Premier Equipment Proprietary LTD., :

Defendants-Appellees-Appellants. :
----- -x

Docket No.

76-7063

B
P/S

Appeal From the United States District Court
For the Eastern District of New York
(John F. Dooling, Jr., District Judge)

REPLY BRIEF OF THE APPELLANT
WITH
ANSWER ON THE CROSS APPEAL

New York, N.Y.
September 2, 1976

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TABLE OF CONTENTS

	PAGE
REPLY BRIEF OF THE APPELLANT	
VI. SUMMARY OF REPLY	1
VII. PLAINTIFF'S REPLY TO DEFENDANTS' ANSWER TO PLAINTIFF'S ARGUMENT	2
A. Failure to Follow the Supreme Court's and This Court's Uniform Procedure to Resolve the Obviousness-Non- obviousness Issue, and Invalidating Patent <u>on Its Face</u> -- the Lower Court's First Primordial Error	2
N. Relevant Secondary Considerations Are Circumstantial Evidence of the Highest Probative Value, Are Part of the Obviousness-Nonobviousness Determination and Are Considered After Completion of a Preliminary Determi- nation of the Precise Subject Matter at Issue	2
O. In Concluding That the Patent Is Invalid on Its Face the Lower Court Relied Solely on the Prior Art Data Processing Building Blocks Referenced in the Patent and Explained at the Trial -- Erroneously Controverting the Statutory Presumption of Validity	5
P. The Lower Court Did Not Correctly Resolve the Level of <u>Ordinary Skill</u> , Certainly Not in the Totalisator Art, and Not in Its Erroneously-Concluded Data Processing Field	8
Q. Judge Dooling's Erroneous "Same Union of Means to Do the Same Totalisator Task" Dramatizes the Continuing Wisdom of Judge Learned Hand to Look at the Situation Before and After It Appears	10
B. Evidence of Invention Is Overwhelming Because All of the Indicia of Nonobviousness Recognized by the Supreme Court and This Court Are Present	11
R. The Effectively Admitted Presence of Six Indicia of Nonobviousness by Themselves Decisively Tilt the Patentability Scale Down on the Validity Side	12
S. Defendants' No Daily Double Issue Red Herring, Non- infringement of Claims 31-33 -- Claims 20-22 Cover It	13

C. Pertinent Art Is the Totalisator Business Not the General Data Processing Field -- the Lower Court's Second Primordial Error	15
T. Defendants Confuse the "Pertinent <u>Prior Art</u> " with the Pertinent Art of § 103's "Person Having Ordinary Skill in the Art to Which Said Subject Matter Pertains"	15
U. The Lower Court Grossly Erred in Concluding That There Is No Totalisator Art and in Not Applying Ordinary Skill of a Person in That Pertinent Art in the § 103 Obviousness Test	17
D. In Completely Disregarding the History of the Totalisator Business Before the Claimed Inventions Were Made and Their Economic Impact Afterwards, and with the Wisdom of Hindsight Gained from a Complete Mastery of the Complex Teachings of the Patent, the Lower Court Erroneously Resolved the Obviousness-Nonobviousness Issue by Finding the Patent Obvious on Its Face As "ABC Data Processing"	19
V. The Lower Court Erroneously Held the Patent Invalid on Its Face As "ABC Data Processing", i.e. As What Defendants Term "Routine Application of the Then Current State of the Art Data Processing Technology"	20
E. Refusal to Permit Patentees to Examine Defendants' Totalisator Witness on § 103's Level of "Ordinary Skill in the [Pertinent] Art" -- Reversible Error Per Se	21
W. As Defendants' Fact Witness on the Then Current Amtote Totalisator, Fosse Was Qualified to Give Testimony on the Level of Skill in the Totalisator Business	21
F. Defendants Admittedly Acquired the Feasibility Prototype From Roosevelt Raceway, to Whom It Had Been Transferred <u>With Drawings</u> , But Defendants Did Not Produce the Prototype Drawings or Trace Out the Prototype Circuitry for the Trial -- Burden of Proof of the Feasibility Prototype Details Constantly Remained on Defendants and It Was Grossly Unjust and Reversible Error for the Lower Court to Invalidate the Claims Because Patentees Could Not Find All of the Drawings or "Adequately" Explain Why	22
X. Only Claims 20-22 Were Held Anticipated, Claims 23-27 Were Invalidated Because of the Unfound Drawings -- Plaintiff Challenges Defendants to State That Amtote Did Not Acquire the Drawings When They Acquired the First Tote and the Prototype -- Burden Admittedly on Them	22

PAGE

G. Feasibility Prototype Was Not a Prior Invention and Thus Is Not Prior Art Because, Being Commercially Incompetent, It Was Never Reduced to Practice	24
Y. Patentees Complied With § 102(f) Because They Were the "Authors" of the First Tote Described and Claimed in the Specification	25
Z. In Effectively Conceding the Inapplicability of Prior Invention Under § 102(g) Defendants Conceded That Any Invention in the Prototype Was Never Reduced to Practice Thus Conceding That There Is No Bar Under § 102(a)'s "The Invention Was Known or Used by Others", Which Requires Reduction to Practice	27
AA. § 102(a) Is Also Not a Bar Because There Was No <u>Public</u> Knowledge or Use of the Prototype	28
H. Initial Designers of the Feasibility Prototype Are Joint Inventors of the First Tote and Should Be Added to the Patent Under 35 U.S.C. § 256	29
AB. Since the Named Patentees Are True Joint Inventors of the Patent Under § 102(f) and Defendants Do Not Question the Joint Inventive Contributions to the First Tote by Its Initial Designers, They Can Be Added to the Patent	29
I. How the Novel Claimed Inventions Solved the Prior Art Racetrack Totalisator Problems and Satisfied the Long-Felt Need for Economically Automated Daily Double Betting . .	30
(10) The Patent Law Does Not Recognize Unpublic Impractical Machines Like the Prototype	30
(1) Heart of the First Tote -- Multi-Function Generating Means For Generating Signals Representing the Particular Ticket Issuing Machine (TIM)	31
(11) Multi-Functions of the Claim 20(B) TIM Number Signal Generation Means and Novelty Over the Prior <u>Electromechanical</u> Prior Art Are Not Questioned by Defendants . .	31
(2) How Daily Double Betting Was Economically Automated by the Claims 20-22 Invention	32
(12) Defendants Do Not Question That the First Tote Economically Automated Daily Double Betting and That the Claims 20-22 Invention is Faster, More Compact, More Accurate, More Flexible and Less Expensive Than Was NYRA's Electromechanical Tote	32

(3) Additional Advantages of the Claims 20-22 Invention -- Faster, More Compact, More Accurate, More Flexible, More Reliable and Less Expensive	33
(13) If These Advantages Were Only a Question of Electronics, Available From At Least the Mid-1950's, Why Did Not Defendant Atusa Build Its Own All-Electronic Tote to Break Amtote's Monopoly, Before the First Tote Did in 1963?	33
(4) How Judge Dooling (Erroneously) Invalidated Claims 20-22 on Their Face	34
(14) Defendants Have Not Clearly Supported Judge Dooling's Disregard of Entire Claims, Claims 21 and 22, as "Adding Nothing" and Claim Language, Part of Claim 20(C), as "Null Language"	34
(5) All-Electronic Means of the Claims 20-22 Invention Further Enhances Invention	34
(15) Defendants Do Not Question That Judge Dooling Found Both That the Specification Was Drawn From the First Tote and Reflects Its Electronic Makeup and That Nearly All of the Means Elements of the Claims 20-22 Invention are Electronic	35
(6) Synergistic Results of Multi-Function TIM Number Signal Generation Means Still Further Enhances Invention of Claims 20-22 Invention	35
(16) The Lower Court Erred in Requiring <u>Unobvious</u> Utility for Synergism and Compounded that Error with a Technical Oversight Concerning the Multi-Function TIM Number Signal Generation Means	35
(7) High-Speed Scanning of Low-Speed TIMs Using Multi- Function TIM Number Signal Generating Means -- the Claims 24-25 Invention	37
(8) Scratched Horse Sub-System (Claim 23) and Error Checking Sub-System (Claims 26-27), Both Novel, Supplement Claim 20(C)'s "Issuing a Ticket Only If the Transaction Is Correct".	37
(17) Claims 24-25 Are Construed to Include the Novel TIM Number Signal Generating Means; and All of the Claims Are Limited to Solid State Circuits or Equivalents So That Any <u>Electromechanical</u> "First Tote" Would Not Infringe	37

	PAGE
(9) Principal Prior Art Patent (Handley) Is Inoperative Thus Clinching Inventiveness of the Claimed Inventions	39
(18) Parimutuel Wagering Systems Cannot Tolerate Errors in Processing Wagers and Inoperative Handley Makes Errors	39
J. Software Programmed General-Purpose Computer Is a New Machine System and the Accused NYRA and PDP-8 Totalisators Infringe Claims 20-27 Because They Were Newly Designed and Perform All of the Claimed Functions . . .	40
AC. Defendants Do Not Question That a Software Programmed General-Purpose Computer Is a New Machine System and That the NYRA and PDP-8 Totalisators Were Newly- Designed and Perform All of the Claimed Functions	40
AD. The Accused Totalisators Are Things Which Function Without Human Intervention So That the Necessary Means Must Coexist	40
AE. Since Sequentially-Functioning Hard-Wired Programmed Computers Admittedly Can Infringe Apparatus Claims So Can Sequentially-Functioning Soft-Wired Programmed Computers	41
AF. If Infringement Depends on Element Coexistence Then At Least Claims 20, 24, 25, 26 and 27 Are Infringed -- Especially Claim 24 Which Does Not Use the Computer	42
(1) Software Programmed General-Purpose Computer Is More Permanent Than an Incomplete Unprogrammed Computer Having No End Use	43
(2) Software Programmed General-Purpose Computer Is a <u>New</u> Machine According to the Supreme Court in the Recent <u>Johnston</u> Case	43
(3) Machine Need Not Be Permanent to Infringe a Machine System Patent -- Otherwise There Is a Denial of Equal Protection of the Patent Laws	43
(4) The Accused Totalisators Perform Their Functions Simultaneously as a Practical Matter -- Defendants' Highly Technical Time Distinction Is Without a Practical Difference . . .	43
(5) In the <u>Decca</u> Case the Functions of Different Elements of an Apparatus Claim Were Performed by a Software Programmed Computer -- Held Infringed	44

PAGE

K. Equivalence of Hardware and Software Means to Program a Computer Is Generally Recognized So That a Software Programmed Computer Performing the Same Functions As a Combination of Machine Means Is an Infringement Under the Doctrine of Equivalents	44
L. Programmable Computer Has a Changeable "Rule of Action" and If It Can Be Used to Infringe With Impunity Technological Progress Will be Impeded and the Supreme Court's <u>Johnston</u> Case Undermined	44
M. Lower Court's Rationale of Noninfringement, That All of the Tasks of the Patented Machine System Are Performed by Known Computers, Is Factually Incorrect So That the Noninfringement Conclusion Should Be Reversed	44
AG. Defendants Do Not Question the Equivalence of Hardware and Software; Or That a Programmable Computer Has a Changeable "Rule of Action"; Or That Not All of the Tasks of the Patented Machine Are Performed by Computers So That the Lower Court's Rationale for Noninfringement Is Incorrect	44
AH. In an Automatic Sequencing Operation a Capability of Immediately Determining What Happens Next Is Needed and Cannot Be Done Unless Necessary Structure Coexists in Time	44
VIII. CONCLUSION OF REPLY	45
IX. PLAINTIFF'S ANSWER TO DEFENDANTS' ARGUMENT ON THE CROSS APPEAL	46
AI. Plaintiff Did Not Withhold From the Patent Office Any Invalidating Material Facts Because There Are None	46
AJ. An Attorney Fees Award for Conduct Less Than Fraud Requires Deliberate Misrepresentation to the Patent Office of a Material Fact -- Which Defendants Have Failed to Prove by Any Standard of Burden	46

TABLE OF AUTHORITIES

<u>Cases</u>	PAGE
Adams, see United States v. Adams	
Calmar, Inc. v. Cook Chemical Co., <u>sub nom</u> Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966)	4
CMI Corp. v. Lakeland Construction Co., Inc., ___ F.Supp. ___, 184 USPQ 721 (N.D. Ill. 1975)	39
Continental Can Co. v. Old Dominion Box Co., 393 F.2d 321, 157 USPQ 353 (2d Cir. 1968)	4, 16
Dann v. Johnston, 96 S.Ct. 1393, 189 USPQ 257 (1976)	2, 15, 16, 43
Decca Ltd. v. The United States, 188 USPQ 167 (Ct. Cl. Trial Div. 1975), <u>aff'd</u> , 287 PTCJ A12 (July 9, 1976)	43, 44
Eibel Process Co. v. Minnesota & Ontario Paper Co., 261 U.S. 45 (1923)	5
Faulkner v. Gibbs, 170 F.2d 34, 79 USPQ 158 (9th Cir. 1948), <u>aff'd</u> , 338 U.S. 267, 83 USPQ 192 (1949)	41
Formal Fashions, Inc. v. Braiman Bows, Inc., 369 F.2d 536, 152 USPQ 78 (2d Cir. 1966)	4
Gibbs v. T.Z.R. Amusement Corp., 14 F.Supp. 957, 29 USPQ 518 (E.D.N.Y. 1936)	41
Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966)	2, 5, 9, 11, 15, 19, 36
Gross v. JFD Mfg. Co., Inc., 314 F.2d 196, 137 USPQ 1 (2d Cir. 1963), <u>cert. denied</u> , 374 U.S. 832, 137 USPQ 913 (1963)	39
Hotchkiss v. Greenwood, 11 How. 248 (1851)	17
International Carrier-Call and Television Corporation v. Radio Corporation of America, 142 F.2d 493, 61 USPQ 392 (2d Cir. 1944)	26
Johnston, see Dann v. Johnston	

PAGE

Kahn v. Dynamics Corp. of America, 508 F.2d 939, 184 USPQ 260 (2d Cir. 1974), <u>cert. denied</u> , 95 S.Ct. 1657, 185 USPQ 505 (1975)	47
Monolith Portland Midwest Co. v. Kaiser Aluminum & Chem. Corp., 407 F.2d 288, 160 USPQ 577 (9th Cir. 1969)	47
Plantronics, Inc. v. Roanwell Corp., 403 F.Supp. 138, 187 USPQ 489 (S.D.N.Y. 1975)	26
Reiner v. I. Leon Co., 285 F.2d 501, 128 USPQ 25 (2d Cir. 1960)	4
Safety Car Heating and Lighting Co. v. General Electric Co., 155 F.2d 937, 69 USPQ 401 (2d Cir. 1946)	3, 11
Sakraida v. Ag Pro, Inc., 96 S.Ct. 1532, 189 USPQ 449 (1976)	17
Stearns v. Tinker & Rasor, 252 F.2d 589, 116 USPQ 222 (9th Cir. 1957)	28
Timely Products Corp. v. Arron, 523 F.2d 288, 187 USPQ 257 (2d Cir. 1975)	3, 4, 9, 15, 47
United States v. Adams, 383 U.S. 39, 148 USPQ 479 (1966)	26, 38
Vanity Fair Mills Inc. v. Olga Co. (Inc.), 510 F.2d 336, 184 USPQ 643 (2d Cir. 1975)	4

Statutes

35 U.S.C. § 101	1, 25-27
35 U.S.C. § 102	4, 10, 15, 19
35 U.S.C. § 102(a)	1, 19, 24, 25, 27-29, 46
35 U.S.C. § 102(c)	19, 27
35 U.S.C. § 102(f)	1, 19, 24, 25-27, 29, 46

PAGE

35 U.S.C. § 102(g)	1, 24, 25, 27, 46
35 U.S.C. § 103	3, 4, 5, 8, 10, 11, 15-18, 20, 36
35 U.S.C. § 112	26, 37, 38
35 U.S.C. § 253	14
35 U.S.C. § 256	29
35 U.S.C. § 282	8
35 U.S.C. § 285	46
37 Code of Federal Regulations, Patents, Trademarks and Copyrights	25

Miscellaneous

Commentary On the New Patent Law, P. J. Federico, 35 U.S.C.A. §§ 1 to 110	25
1 Deller's Walker on Patents (2d. Ed. 1972)	28, 30
Laying the Ghost of the 'Invention' Requirement, Oration by Judge Giles S. Rich of CCPA	3

REPLY BRIEF OF THE APPELLANT

VI. SUMMARY OF REPLY*

In denying defendants' motion to amend the judgment to declare Claims 20-27 invalid under § 101 because they were not the invention of the patentees, the Lower Court stated (A299):

The article of the patent could not be found, on the evidence, to have been patentable over the Demonstrator, and, on the evidence, the Demonstrator was critical prior art. But that does not signify that what Weida et al. filed on did not have to be processed as the Weida et al. invention against all the relevant prior art and found good or bad in the light of it.

Defendants have conceded that the Demonstrator-prototype is not a prior art invention under § 102(g). Being commercially incompetent, any invention it contained was not legally reduced to practice. That also rules out § 102(a). § 102(f) is the same argument rejected above by the Lower Court because it is the Weida et al. invention (the First Tote) which is the subject matter of the patent, not the prototype. So §§ 101, 102(g), (a) and (f) are inapplicable and the prototype is not a bar to a valid patent. (Points G, Y, Z, AA)

The secondary considerations of nonobviousness are circumstantial evidence of the highest probative value and are considered after completion of a preliminary determination of the precise subject matter at issue -- especially if there is substantial novelty, here very substantial. Six of nine indicia of nonobviousness are effectively admitted and, by themselves, decisively tilt the patentability scale down on the validity side. (Points N, R)

The accused totalisator systems, which admittedly perform all the claimed functions, infringe as new machines even though they incorporate programmed general purpose computers. Defendants' "transitory" theory of noninfringement is unsound. Even if sound, Claims 20 and 24-27 are infringed. (Points AC-AH, J(4)-(5))

* The Table of Contents is a more detailed summary.

VII. PLAINTIFF'S REPLY TO
DEFENDANTS' ANSWER TO PLAINTIFF'S ARGUMENT*

A. FAILURE TO FOLLOW THE SUPREME COURT'S AND THIS COURT'S
 UNIFORM PROCEDURE TO RESOLVE THE OBVIOUSNESS-NONOBVIOUSNESS
 ISSUE, AND INVALIDATING PATENT ON ITS FACE -- THE LOWER COURT'S
FIRST PRIMORDIAL ERROR (PlBr15-19)

DEFENDANTS' MAIN ANSWER (AnsBr46-55)

There is no error. Graham's "uniform procedure" was exhaustively followed by the Court below which thoroughly determined the scope and content of the prior art, ascertained the differences between the claims and the prior art and resolved the level of ordinary skill in the pertinent art, the primary criteria. "Secondary considerations" are not of any probative value. They are relied on only after the question of obviousness cannot be resolved by the primary criteria.

Judge Dooling's conclusion "on the face of the patent and in the light of the disclosures of its cited materials, that the claims in suit do not embrace any patentable discovery or invention" (A220M182) is only arguably assertable because it is located near the end of the opinion. The patent was not held "invalid on its face", because Judge Dooling explained the teaching of the patent against the background of the prior art and stated that there is no novel circuitry involved as is clear from the face of the patent and from the trial evidence. The Court was fully aware of the prior art digital data processing both in totalisators and in similar equipment. The level of ordinary skill was the routine application of the then current state of the art data processing technology. The patentees brought no new discovery to the [totalisator] task but only a routine choice of familiar but newer means to replace the older ones of Handley in the same union of means.

PLAINTIFF'S MAIN REPLY

N. RELEVANT SECONDARY CONSIDERATIONS ARE CIRCUMSTANTIAL
 EVIDENCE OF THE HIGHEST PROBATIVE VALUE, ARE PART OF
 THE OBVIOUSNESS-NONOBVIOUSNESS DETERMINATION AND ARE
 CONSIDERED AFTER COMPLETION OF A PRELIMINARY DETERMI-
NATION OF THE PRECISE SUBJECT MATTER AT ISSUE

In Dann v. Johnston, 96 S.Ct. 1393, 189 USPQ 257 (1976), the Supreme Court stated at note 4:

... we did indicate in Graham v. John Deere Co., 383 U.S. 1 (1966), that "secondary considerations [such] as commercial success, long felt but unsolved needs, [and] failure of others" may be relevant in a determination of obviousness. Id., at 17.

* For brevity, plaintiff does not reply specifically to pages 1-45 of the Answer Brief of Defendants-Appellees (AnsBr1-45) on the assumption that defendants' best arguments there are incorporated in their answers to pages 15-85 of Brief of the Appellant (PlBr15-85)

Secondary considerations, to the extent relevant, are thus taken into account in the basic determination of obviousness and not only after the application of the "primary criteria" does not resolve the issue. As this Court recently stated in Timely Products Corp. v. Arron, 523 F.2d 288, 292, 187 USPQ 257, 261 (1975):

In referring to such factors as "secondary considerations" the Court surely did not intend to depreciate their importance, but only to indicate that they are to be considered after a preliminary determination of the precise subject matter at issue has been completed....

We can conceive of no better way to determine whether an invention would have been obvious to persons of ordinary skill in the art at that time, than to see what such persons actually did or failed to do when they were confronted with the problem in the course of their work. (Emphasis in original)

Judge Giles S. Rich of the Court of Customs and Patent Appeals (one of the authors of 35 U.S.C. 103) discussed the use by the Supreme Court of the term "secondary" as follows:¹

"I do not believe the Supreme Court intended to signify anything by the term 'secondary.' It could equally have said 'other considerations.' It cited a law review note entitled 'Subtests of 'Nonobviousness'', not 'secondary' tests. I suggest that in thinking about those 'considerations' they be looked upon for what they factually are: circumstantial evidence of the highest probative value. As a judge, if I were presented with a defense of obviousness and the evidence showed that the defendant, long knowing about a problem in his product or his manufacturing process for which he had found no solution, changed over to use his competitor's patented invention as soon as he heard of it, I would not call that evidence 'secondary' and ignore it in considering his argument that it was an obvious invention. I would think, as did Learned Hand (Safety Car Heating and Lighting Co. v. General Electric Co., 155 F.2d 937, 939) in 1946 that:

In appraising an inventor's contribution to the art, ***the most reliable test is to look at the situation before and after it appears.*** Courts, made up of laymen as they must be, are likely either to underrate, or to overrate, the difficulties in making new and profitable discoveries in fields with which they cannot be familiar;

1. "Laying the Ghost of the 'Invention' Requirement", an oration on 35 U.S.C. 103 to The Patent Law Associations of Los Angeles and San Francisco on September 18 and 20, 1972.

and, as far as it is available, they had best appraise the originality involved by the circumstances which preceded, attended and succeeded the appearance of the invention.*** We have repeatedly declared that in our judgment this approach is more reliable than a priori conclusions drawn from vaporous, and almost inevitably self-dependent, general propositions." (Emphasis in original)

This Court continues to follow Judge Learned Hand's counselling that the only reliable way to resolve the issue of obviousness is by reference to the history of the art, including such "signposts" as "how long did the need exist; how many tried to find the way; how long did the surrounding and accessory arts disclose the means; how immediately was the invention recognized?"² Moreover, this Court cites Judge Learned Hand's landmark Reiner decision as "doubtless a major tributary of the [Supreme] Court's" secondary considerations statement. Timely, supra.

The cases, other than Timely, supra, relied on by defendants (at AnsBr48)-- Formal Fashions, Inc. v. Braiman Bows, Inc., 369 F.2d 536, 152 USPQ 78, (2d Cir. 1966); Continental Can Co. v. Old Dominion Box Co., 393 F.2d 321, 157 USPQ 353 (2d Cir. 1968); Vanity Fair Mills Inc. v. Olga Co., (Inc.), 510 F.2d 336, 184 USPQ 643, (2d Cir. 1975); and especially Vanity Fair Mills -- can be distinguished as holding that detailed consideration of obviousness under § 103 is not reached if there is no substantial novelty under § 102. Even so, these cases would seem to conflict with Calmar, Inc. v. Cook Chemical Co., decided sub nom Graham v. John Deere Co., 383 U.S. at 35-36, 148 USPQ at 474 (1966), in which the § 102 differences were "exceedingly small and quite nontechnical" but the Supreme Court considered three "legal inferences or subtests" (including

2. Judge Learned Hand's reference to the "history of the art" serves to emphasize that the § 103 "pertinent art" is the art which had the need, the totalisator art, and not the accessory arts of data processing technology.

commercial success) before concluding that "these factors do not, in the circumstances of this case, tip the scales of patentability." ³

In any event, the novelty in this case is very substantial and six of nine subtests of nonobviousness are effectively admitted, with the remaining three improperly challenged. Point R, infra. Under these circumstances, the scales of patentability come crashing down on the side of patentability.

Thus, Judge Dooling clearly erred in failing to take the very relevant secondary considerations (legal inferences or subtests) into account as part of the uniform procedure to determine the issue of obviousness. In a 250+ page Memorandum and Order, he never mentions Graham or quotes § 103!

O. IN CONCLUDING THAT THE PATENT IS INVALID ON ITS FACE THE LOWER COURT RELIED SOLELY ON THE PRIOR ART DATA PROCESSING BUILDING BLOCKS REFERENCED IN THE PATENT AND EXPLAINED AT THE TRIAL -- ERRONEOUSLY CONTROVERTING THE STATUTORY PRESUMPTION OF VALIDITY

The full quote of Judge Dooling's "invalid on its face" conclusion (A220 M182) is as follows:

The prior art emphasized at the trial and considered in the posttrial briefs and proposed findings is all but confined to totalizator systems and patents. While it has been concluded on the face of the patent and in the light of the disclosures of its cited material, that the claims in suit do not embrace any patentable discovery or invention, and it has been concluded that the relevant field for inquiry is data processing, of which racetrack parimutuel totalizators are instances, consideration of the totalisators of the prior art confirms the conclusion that no patentable discovery or invention is present.

Putting that conclusion near the end of the Memorandum and Order serves to enhance its significance. ⁴ Putting it before the consideration of the totalisator

3. In Eibel Process Co. v. Minnesota & Ontario Paper Co., 261 U.S. 45 (1923), the Supreme Court held a paper making machine patent valid where the only difference was raising one end of the prior art paper making machine. But that slight difference produced a surprising difference in results.

4. As shown by the completely different theory of noninfringement appearing at A40 M2 from that finally adopted at A250-251 M212-213.

prior art emphasizes the distinction between the data processing prior art (especially the then state of the art solid state electronic data processing) and the totalisator prior art.

A study of the pages of the Memorandum between the quoted conclusion and the statement at M68 (A106)

Untangling the patent from the bramble of unfamiliar terminology is not very easy, but the 25 day trial illuminated the darker corners and, it is believed, made possible a reliably simple explanation of the teachings of the patent against the background of the prior art.

makes it clear that the prior art background to which Judge Dooling is there referring is the data processing prior art. And a close reading of those pages will reveal that what he is referring to in the data processing prior art are the conventional solid state electronic building blocks which were the basic components of the data processing arts when the patent application was filed in 1963.⁵ The building blocks technique was explained at the trial by patentee Weida as part of his detailed explanation of the electronic makeup of the disclosed First Tote. (A161 M123) That Judge Dooling is referring to the conventional electronic building blocks components is the only reasonable explanation of the following quotes (at AnsBr52-53, and all of the others of the Lower Court which fall under the rubric "ABC data processing"):

5. In 1963 "the patentees were men and women working in [the electronic data processing] field, and ... very naturally working in the newest branch of it, the solid state electronic data processing arts invoking the use of transistors and other semiconductors." (A41 M3) Solid state electronic data processing technology provided the conventional building blocks. That is confirmed in the patent at col. 15, lines 44-46 and 51-52: "Further since the various elements shown in the system are made up of standard components, and standard assemblies, reference may be had to . . . , and for detailed circuitry, to for example 'Principles of Transistor Circuits,'"

In designing the revolutionary NYRA Totalisator (A1335 DoD3568), Dr. Highleyman, in 1964, used the same building blocks technique. (A1280 HiD2703)

Each component is, as the specification makes plain, a familiar of the prior art (existing in various forms), and it performs its familiar role in a familiar way.

So here, the system of Claim 20 represents a linear linkage of known devices each performing in sequence its familiar task. No discovery of any novel union of means is present, but only a functionally adequate union of means in which each means is used to do what its nature and previous use suggest.

Nowhere in the prior art (totalisator, data processing or any kind) do the defendants or Judge Dooling point to the crucial Claim 20(B) TIM number signal generation means. Judge Dooling did not find it in the Handley electromechanical totalisator (A235 M197) or the Amtote Model 7J Aqueduct Totalizator (A238-239 M200-201). Claim 20(B) was defined by Judge Dooling as "appropriate electronic linkage." (A179-180 M141-142). He specifically describes the TIM number signal generation means at A208 M170:

[T]he scan counter S1A ("a chain of conventional cascaded binary counters wherein each binary counter has an output from both its '1' and its '0' sides such as those shown *** on page 194 of Arithmetic Operations *** by R. K. Richards *** 1955"; Col. 11, line 74 to Col. 12, line 5) is the disclosed means of generating the TIM number signals....

Thus, the "linear linkage of known devices" in the case of the admittedly novel TIM number signal generation means is a linkage of conventional binary counters. The conventional binary counter is one of the conventional building blocks of the electronic data processing technology.

Returning to Judge Dooling's "invalid on its face" conclusion at A220 M182: "While it has been concluded on the face of the patent and in the light of the disclosures of its cited material" can only refer to the disclosures of the prior art building blocks of the solid state electronic data processing technology specifically referenced in the patent, Col. 15, lines 44-62. It surely does not refer to the prior totalisator art.

Judge Dooling did invalidate the patent on its face as a result of his dual primordial errors -- not following the uniform procedure to determine the obviousness issue and compounding that error with erroneously finding the pertinent art of the § 103 ordinarily-skilled man to be the data processing field rather than the totalisator art from whence came the need. It is his derivative "ABC data processing" error which permeates his "on the face invalid" analysis at Memorandum and Order pages 68-182. (A106-220)

Since the disclosure of the referenced solid state electronic data processing building blocks was, of course, before the Examiner, the statutory presumption of validity, 35 U.S.C. 282, applies and it was reversible error for Judge Dooling to hold the patent invalid on its face.

P. THE LOWER COURT DID NOT CORRECTLY RESOLVE THE LEVEL OF ORDINARY SKILL, CERTAINLY NOT IN THE TOTALISATOR ART, AND NOT IN ITS ERRONEOUSLY-CONCLUDED DATA PROCESSING FIELD

The Lower Court did determine the scope and content of the prior electro-mechanical totalisator art and ascertain the differences between that prior art and claims 20-27 (at A220-241 & 182-203). But Judge Dooling failed to find when the claimed inventions were made (completely conceived).⁶ And he did not correctly resolve the level of ordinary skill in the pertinent art of § 103's ordinarily-skilled man, even in his erroneously-concluded data processing field.

The so-called "routine application of then current state of the art data processing technology" (AnsBr49) could not properly be ascertained from the patent disclosure. Not only is the subject matter disclosed and claimed presumed to be above the level of ordinary skill, three of the five patentees, witness Weida,

6. Between mid and late 1962. (A1146 WeD1180-82)

Berezin and Richards (also the witness Leonard), are veteran inventors. (PX155, 123A, DXP, DXQ; A981 WeD46) Dr. Highleyman, defendants' expert witness, is also a veteran inventor. The only witness who could have given first hand evidence of the level of ordinary skill is Fosse, whose testimony was excluded by Judge Dooling. (Pl Br30-32) The reference to the "prototype routinely designed and constructed by corporate employees" (AnsBr49) is unfair because preliminary designer Shaw was a veteran inventor and a computer pioneer, and its operating design was completed by veteran inventor Weida. (A64-65 M26-27)

What is deemed "routine" by veteran inventors like Weida, Leonard and Dr. Highleyman is not the level of ordinary skill but the level of inventive skill. For example, the second all-electronic tote, the NYRA Totalisator, logically designed by Dr. Highleyman, was deemed revolutionary by a very high ranking Atusa officer. (A1335 DoD3568) And a revolutionary totalisator system is hardly the result of routine state of the art data processing.

In sum, the only evidentiary inputs Judge Dooling had on the level of skill in the data processing field were inventive and not ordinary. And he specifically excluded Fosse's testimony on the level of ordinary skill in the totalisator art. His erroneous conclusion of ABC data processing is, in part, the result of "slipping into the use of hindsight" and failing to "resist the temptation to read into the prior art the teaching of the invention in issue." Graham cited in Timely, supra. His erroneous conclusion is also a result of erroneously concluding that the data processing field is the § 103 pertinent art.

Q. JUDGE DOOLING'S ERRONEOUS "SAME UNION OF MEANS TO DO THE SAME TOTALISATOR TASK" DRAMATIZES THE CONTINUING WISDOM OF JUDGE LEARNED HAND TO LOOK AT THE SITUATION BEFORE AND AFTER IT APPEARS

In concluding that the patentees "brought no new discovery to the [totalisator] task but only a routine choice of familiar but newer means to replace the older ones of Handley in the same union of means," (A238 M200) Judge Dooling meant only that both the patented First Tote and Handley (as well as the Aqueduct Totalizator) performed the totalisator task with:

unions of means embracing, of course, TIMs, individual runner and total aggregators, scratch horse wager rejection means usable to detect and reject an effort to aggregate wagers on two runners on the same scan, scanning means, and acknowledgement means. (A238 M200)

Then he recognizes, but dismisses, the substantially novel TIM memory of Claim 22 and claim elements 21(C) and 21(E) (A238-239 M200-201) -- failing to recognize the crucial novelty of Claim 20(B)'s TIM number signal generation means.

Having found novelty -- i.e. § 103's "the invention is not identically disclosed or described as set forth in section 102"-- all of the indicia of nonobviousness should have been considered under the uniform procedure to determine the obviousness-nonobviousness issue. He reversibly erred in not doing so. Instead, he refers to the choice of newer means (i.e. the conventional solid state building blocks as compared with the older electromechanical components of Handley and the Aqueduct Totalizator) as routinely doing the old totalizator task. That is like saying there is no difference between a horse and carriage and an automobile because they both do the same transportation task! In fact, the First Tote did much more than the prior art Model 7J Amtote totalisator at Aqueduct -- especially daily double bet processing.

Since Judge Dooling found that "there was no want of practical, efficient and economically feasible electromechanical and mixed electromechanical and electronic installations in daily use at racetracks all over this and other countries for handling parimutuel betting" (A284 F32), why have all-electronic totes embodying the claimed inventions substantially supplanted the prior art totes (A1332 DoD3536) -- especially if they are just doing the same task with the same union of means? And what about all the other indicia of nonobviousness (P1Br19-21)?

Judge Dooling's erroneous invalidity conclusion based on the "same union of means to do the same totalisator task" serves to dramatize the continuing wisdom of this Court's great Judge Learned Hand: "In appraising an inventor's contribution to the art, . . . the most reliable test is to look at the situation before and after it appears." Safety Car Heating and Lighting Co. v. General Electric Co., supra.

B. EVIDENCE OF INVENTION IS OVERWHELMING BECAUSE ALL OF THE INDICIA OF NONOBVIOUSNESS RECOGNIZED BY THE SUPREME COURT AND THIS COURT ARE PRESENT (P1Br19-22)

DEFENDANTS' MAIN ANSWER (AnsBr55-57)

Such "secondary considerations" are not of any probative value in this case in view of the Court's meticulous and exhaustive compliance with the primary determinants of obviousness under § 103 as required by Graham. However, it should be noted that there was no long-felt need for electronics to handle parimutuel betting at racetracks and no obsolescence of electromechanical totalisators. Amtote had no real incentive to introduce an electronic solid state totalisator system. The "daily double" is not here in issue because Claims 31-33 are not infringed. There was no immediate widespread utilization of electronic totes to support the asserted commercial success. The NYRA Tote was routinely designed.

PLAINTIFF'S MAIN REPLY

The secondary considerations are circumstantial evidence of the highest probative value -- see Point N and especially the comment of Judge Giles S. Rich of the CCPA.

**R. THE EFFECTIVELY ADMITTED PRESENCE OF SIX INDICIA OF
NONOBVIOUSNESS BY THEMSELVES DECISIVELY TILT THE
PATENTABILITY SCALE DOWN ON THE VALIDITY SIDE**

Defendants do not deny that the following indicia of nonobviousness are present:

- (1) a long-felt but unsolved need to economically automate the manually-performed daily double bet processing;
- (2) the necessary technology was available at least as early as the mid-1950s;
- (3) Amtote, the leader in the totalisator manufacturing business, had failed to solve that need;
- (4) Amtote represented that the need could not be solved;
- (5) as a result of the March 1963 demonstration of the experimental 20-TIM First Tote, there was an immediate recognition that Digitronics had satisfied the need -- the First Tote was deemed a marvel, a breakthrough and the answer to a parimutuel manager's prayers;
- (6) the flattery of infringement by NYRA was immediate.

Surely the effectively admitted presence of these six indicia of nonobviousness is much more than required to weight the patentability scale decisively down on the validity side. Moreover, the weakness of defendants' arguments against the presence of the indicia of nonobviousness of commercial success, obsolescence of the prior art electromechanical tote and considering the first copy, the NYRA Tote, as revolutionary, only serve to dramatize the overwhelming circumstantial evidence of nonobviousness.

Defendants argue that there was no long-felt need for electronics, which the Court found, but do not question the long-felt need to automate daily double betting. Then they add that there was no immediate widespread utilization of electronic

totes, which disregards the introduction of their own PDP-8 Electronic Totalisator. That followed the success of their NYRA Tote in 1966-67 (A1442 PX172) and was before the introduction of the Amtote all-electronic tote in 1969 or 1970. (A1336 DoD3580) They argue that there was no obsolescence of the electromechanical totalisators, completely contrary to their own testimony that the electronic tote substantially supplanted the electromechanical tote. (A1332 DoD3536)

They argue that Amtote had no incentive to introduce an electronic tote when Amtote's failure is better explained by Amtote's belief that a practical all-electronic tote could not be built. (A284 F31) And if Amtote had no incentive, then why all their research and improvement patents (A279,280 F20, F21), with experiments with electronic totes going back to 1945. (A42-43 M4-5) Amtote had the best motivation for building a practical all-electronic tote -- to preserve their monopoly (A283 F30). It was the First Tote that paved the way for defendant Atusa to break Amtote's monopoly.

And defendants' comment that the NYRA Tote was routinely designed conflicts with their testimony that it was revolutionary. (A1335 DoD3568)

Finally, defendants wave a red herring in asserting that daily double is not an issue because claims 31-33 are not infringed.

S. DEFENDANTS' NO DAILY DOUBLE ISSUE RED HERRING, NON-
INFRINGEMENT OF CLAIMS 31-33 -- CLAIMS 20-22 COVER IT

How daily double betting was economically automated in the First Tote is explained at P1 Br52-55, especially 54. In brief, the TIM number signal generation means of Claims 20-22 facilitated the use of the claimed magnetic core memories (Claims 21,22) which permitted the addition of the 150 registers necessary for daily double bet aggregation at an incremental cost of only a few hundred dollars as compared with tripling the Amtote Model 7J cost to add the necessary registers.

A few hundred dollars is trivial when NYRA was paying Amtote well over a million dollars a year in 1964 for an electromechanical totalisator which could not even do daily doubles.

In the First Tote, because of its extremely high speed electronic scanning of the TIMs, it was possible to process each of the two entries of a daily double bet in two successive scans of all of the TIMs, rather than during a single scan. Since the First Tote processed a single bet so rapidly, and because the Claims 20-22 invention permitted the use of the magnetic core registers which economically stored all of the daily double combinations, the First Tote could have processed both entries of a daily double bet at the same time. That is the way it is done in the NYRA Tote and PDP-8 Tote, so they do not infringe Claims 31-33.

The fact that specific claims were included in the patent application to cover the sequential scanning of daily double bets, Claims 31-33, is completely irrelevant to the Claims 20-22 invention which permitted the economic automation of daily double betting in the first place.

If patentees never made Claims 31-33, or removed them from the patent by disclaimer (35 U.S.C. 253), would that make any difference as to the validity of the remaining claims? Each is a separate grant. P1Br58, note 10.

Moreover, Claims 20-22 are clearly infringed by each accused totalisator when regular single-entry betting is handled. Processing a second entry at the same time does not avoid infringement, it only aggravates it. Claims 20-22 clearly cover both regular and daily double betting.

The noninfringement of Claims 31-33 is a red herring.

C. PERTINENT ART IS THE TOTALISATOR BUSINESS NOT THE GENERAL DATA PROCESSING FIELD -- THE LOWER COURT'S SECOND PRIMORDIAL ERROR (PIBr22-26)

DEFENDANTS' MAIN ANSWER (AnsBr57-60)

The pertinent art, as found below, includes the data processing field and the totalisator field as a recognized part thereof and the data processing field cannot be excluded. The patentees worked exclusively in the electronic data processing field and the patent was granted on a data processing system.

In Johnston, data processing systems came within the pertinent art as an application of the Graham policy.

PLAINTIFF'S MAIN REPLY

T. DEFENDANTS CONFUSE THE "PERTINENT PRIOR ART" WITH THE PERTINENT ART OF § 103's "PERSON HAVING ORDINARY SKILL IN THE ART TO WHICH SAID SUBJECT MATTER PERTAINS"

Defendants confuse the art of the § 103 "person having ordinary skill in the art to which said subject matter pertains" with the "prior art" "as set forth in section 102". The § 102 prior art includes all prior art whatever the subject matter. The "pertinent prior art", the relevant prior art, is what the "person having ordinary skill in the art to which said subject matter pertains" is charged with knowing.

In the quoted words of Judge Learned Hand, the pertinent prior art includes the "surrounding art" (the art to which said subject matter pertains) and the "accessory arts" (the arts which that ordinarily skilled person is charged with an awareness of). Timely, supra. What Judge Learned Hand means by the "history of the art" is clear from his "signpost" "how long did the need exist?" His "history of the art" is the history of the art which produced the need. The subject matter of "the art to which said subject matter pertains" is the "subject matter sought to be patented."

Two tests for ascertaining the art "of the person having ordinary skill" thus are (1) in what art did the need arise and (2) what is the art of the subject matter sought to be patented which is asserted to satisfy that need? They have to be the same. Plaintiff terms that art the "pertinent art" as distinguished from defendants' "pertinent prior art".

Pertinent prior art is the same as relevant prior art -- i.e. what the ordinarily-skilled man is expected to know. Continental Can Co., Inc. v. Old Dominion Box Co., Inc., supra, at 393 F.2d 325, 157 USPQ 356. Here, it includes the data processing field, and especially the solid state electronic data processing arts of that field. The ordinary man skilled in the totalisator art, in fact, knew about the solid state data processing arts because the prior art Model 7J Amtote Totalizator included an adjunct solid state digital price computer. (A282 F25)

What is confusing is that in many patent cases, the "pertinent prior art", the most relevant prior art, is in the surrounding art, the art of the § 103 ordinarily-skilled man. In Johnston, supra, however, the art of the ordinarily-skilled man was the banking industry. That is the natural meaning of the following quotes:

Again, as was the case with the prior art within the banking industry
.... 96 S.Ct. 1398, 189 USPQ 261.

In the context of the subject matter of the instant case, it can be assumed that such a hypothetical person would have been aware both of the nature of the extensive use of data processing systems in the banking industry and of the system encompassed in the Dirks patent. 96 S.Ct. 1399, 189 USPQ 261.

But even though the Dirks patent was for a non-banking industry business, it was pertinent prior art under § 103 because it was in an accessory art.

In the case of the subject matter of Claims 20-27, the § 103 art of the ordinarily-skilled person is the totalisator art and he is charged with knowing the accessory arts of data processing.

U. THE LOWER COURT GROSSLY ERRED IN CONCLUDING THAT THERE IS NO TOTALISATOR ART AND IN NOT APPLYING ORDINARY SKILL OF A PERSON IN THAT PERTINENT ART IN THE § 103 OBVIOUSNESS TEST

There is a well-defined totalisator art, to such an extent that the Patent Office has a separate classification for it, Class 235-92. (A40 M2) The prior art Handley totalisator system patent is in Class 235-92 (A945 DXBQ, Cols. 1-2), as is the Lange totalisator system patent (A323 PX3D, Col. 1) cited by the Patent Office Examiner. (A239 M201) So is each of the seven Amtote totalisator system patents abstracted in PX178 (A753).

The "subject matter sought to be patented" by each of Claims 20-27 is a totalisator system. Each of Claims 20-27 is limited to a system comprising ticket issuing machines with actuatable switches each associated with a different entry in a race.⁷ Moreover, the long-felt need for an all-electronic totalisator which would economically automate daily double bet processing was, of course, in the totalisator business.

Applying the above two tests for ascertaining the art of "the person having ordinary skill" leads to the conclusion that "the art to which said subject matter pertains" is the totalisator art. § 103 is a codification of Hotchkiss v. Greenwood, 11 How. 248, 267 (1851), requiring more ingenuity and skill "than were possessed by an ordinary mechanic acquainted with the business, . . ." Sakraida v. Ag Pro, Inc., 96 S.Ct. 1532, 1536, 189 USPQ 449, 451, 452 (1976). The § 103 pertinent art is the totalisator business.

7. The subject matter sought to be patented by Claims 1-19, however, is not in the totalisator art, Class 235-92, but in an electrical communications class, Class 340-172.5, including data processors. See PlBr25, note 4.

The business of the patentees is only relevant if it is the business of the subject matter sought to be patented. In this case it was not. The Digitronics patentees, who were working in the solid state electronic data processing arts (A41 M3), first learned about the totalisator business when they received a description of the parimutuel betting system used in 1959 at Roosevelt Raceway; that was the genesis of the patent. (A41-42 M3-4)

Atusa's "PDP-8 Electronic Totalisator Systems Manual" makes it clear that there still is a totalisator art (A1431 PX50-6):

Personnel required to maintain this equipment must still, of course, be thoroughly steeped in tote philosophy. A new member has been added to the tote team. He is thoroughly versed in the micro and integrated circuits of modern electronics.

Judge Dooling selected the § 103 pertinent art of the ordinarily-skilled person as that of the patentees rather than of the claimed subject matter. And he compounded that primordial error by then assuming that a person like the patentees, who included three veteran inventors, was the hypothetical person of ordinary skill.

Under § 103, the obviousness of the Claims 20-27 subject matter should have been tested against a person having ordinary skill in the totalisator art. Instead, Judge Dooling tested for "patentable novelty" (A238 M200) against the inventive skill of a person like the patentees and in the data processing field. He grossly erred.

D. IN COMPLETELY DISREGARDING THE HISTORY OF THE TOTALISATOR BUSINESS BEFORE THE CLAIMED INVENTIONS WERE MADE AND THEIR ECONOMIC IMPACT AFTERWARDS, AND WITH THE WISDOM OF HINDSIGHT GAINED FROM A COMPLETE MASTERY OF THE COMPLEX TEACHINGS OF THE PATENT, THE LOWER COURT ERRONEOUSLY RESOLVED THE OBVIOUS-NONOBVIOUS ISSUE BY FINDING THE PATENT OBVIOUS ON ITS FACE AS "ABC DATA PROCESSING" (Pl Br26-29)

DEFENDANTS' MAIN ANSWER (AnsBr61-62)

This repeats plaintiff's mischaracterization of Judge Dooling's action rebutted at AnsBr46-57. "What Digitronics had done" precedent to the development of the First Tote was done by others than the patentees and formed part of the prior art. The "ABC data processing" cliché is out of context relating only to magnetic core memory utilization of Claim 21. Plaintiff's derisory statement (at Pl Br27)

In a nutshell, "ABC data processing" is the conclusion of the technologically brilliant Judge Dooling. But only after the wisdom of hindsight decried by the Supreme Court in Graham and gained only from the teachings of the patent disclosure. He finds the claims invalid on their face without remotely considering...

is meritless.

PLAINTIFF'S MAIN REPLY

See plaintiff's main replies to AnsBr46-57.

What is prior art is defined by § 102 and excludes unpublished engineering specifications. The design and construction of the feasibility prototype totalisator was completed by patentee Weida. (A95-96 M57-58, A288 F40) The Westbury brochure disclosed no means to enable practice of any of the claimed inventions. See PlBr41, note 6.

The feasibility prototype is not prior art under § 102(a) because it was not legally reduced to practice. The remaining paragraph of § 102 relied on by defendants (AnsBr64-66), § 102(f), not the true inventors, is not only inapplicable (because patentees did invent the First Tote described and claimed in the patent) but is a non-prior art bar, like abandonment of the invention under § 102(c). See Point Y, infra.

V. THE LOWER COURT ERRONEOUSLY HELD THE PATENT INVALID ON ITS FACE AS "ABC DATA PROCESSING", I.E. AS WHAT DEFENDANTS TERM "ROUTINE APPLICATION OF THE THEN CURRENT STATE OF THE ART DATA PROCESSING TECHNOLOGY"

In characterizing Judge Dooling's conclusion -- that what the patentees did represents "ABC data processing" so that the patent was invalid on its face -- the rubric "ABC data processing" was meant to be the same as defendants' characterization:

As expressly found below, nothing more was here involved than ... the routine application of then current state of the art data processing technology to the updating of an existing data processing system of known and defined functional character... (AnsBr49)

That is, given the desired functions of a needed totalisator system, all patentees did was to apply routine data processing technology to satisfy the need.

If defendants' "routine application of then current state of the art data processing technology" is substituted for "ABC data processing", plaintiff's statements have the same merit. The point is that Judge Dooling erred in using that conclusion to invalidate the patent on its face. He should have followed the uniform procedure of the Supreme Court and this Court and taken into account the "history of the art" and the impact of the inventions on the art -- he should have considered all of the indicia of nonobviousness. And he should have found § 103's "time the invention was made."

And it should be noted that defendants do not answer any of the seven questions (suggesting nonobviousness) at Pl Br28-29 if the claimed inventions were "ABC data processing" or "the routine application of the then current state of the art data processing technology."

E. REFUSAL TO PERMIT PATENTEES TO EXAMINE DEFENDANTS'
TOTALISATOR WITNESS ON § 103's LEVEL OF "ORDINARY SKILL
IN THE [PERTINENT] ART" -- REVERSIBLE ERROR PER SE
(Pl Br29-32)

DEFENDANTS' MAIN ANSWER (AnsBr63)

Apart from the lack of merit that the pertinent art was the totalisator art, Fosse was neither particularly well qualified nor representative for the stated purpose of showing Amtote's level of skill in the totalisator art. The exclusion was no error.

PLAINTIFF'S MAIN REPLY

Whether the pertinent art was the totalisator art or the general data processing field, defendants do not question the fact that Fosse had been with Amtote for about 30 years and had designed the solid state adjunct payoff price computer for the Amtote Model 7J electromechanical totalisator. He surely was skilled in both the data processing field and the totalisator art.

W. AS DEFENDANTS' FACT WITNESS ON THE THEN CURRENT AMTOTE
TOTALISATOR, FOSSE WAS QUALIFIED TO GIVE TESTIMONY ON
THE LEVEL OF SKILL IN THE TOTALISATOR BUSINESS

Fosse was defendants' fact witness on the state of the art as represented by the Amtote Model 7J totalisator system. As a noninventor, he surely was qualified, as a person of ordinary skill in the totalisator subject matter, to give testimony on the level of ordinary skill in the totalisator business.

The exclusion of his testimony was reversible error per se.

F. DEFENDANTS ADMITTEDLY ACQUIRED THE FEASIBILITY PROTOTYPE FROM ROOSEVELT, TO WHOM IT HAD BEEN TRANSFERRED WITH DRAWINGS, BUT DEFENDANTS DID NOT PRODUCE THE DRAWINGS OR TRACE OUT THE PROTOTYPE CIRCUITRY FOR THE TRIAL -- BURDEN OF PROOF OF THE FEASIBILITY PROTOTYPE DETAILS CONSTANTLY REMAINED ON DEFENDANTS AND IT WAS GROSSLY UNJUST AND REVERSIBLE ERROR FOR THE LOWER COURT TO INVALIDATE THE CLAIMS BECAUSE PATENTEES COULD NOT FIND ALL OF THE DRAWINGS OR "ADEQUATELY" EXPLAIN WHY (P1Br32-39)

DEFENDANTS' MAIN ANSWER (AnsBr68-71)

There was a total lack of effort made by plaintiff to locate prototype documentary evidence in response to specific production requests made early in the discovery period. But despite the singular unavailability of such documentary evidence defendants were able to amass a considerable amount of evidence from other sources so that they carried their burden of proof evidenced by Finding 39.

Three TIMs were used with the prototype, two Hohmann and one standard Bell Punch, the latter having "rejection signal responsive means."

The Court below deemed the evidence sufficient to anticipate all of the claims in issue.

Defendants have never had a set of drawings or any of the "details" in their possession; they relied on the evidence they located and bore their burden of proof. There was no error below.

PLAINTIFF'S MAIN REPLY

X. ONLY CLAIMS 20-22 WERE HELD ANTICIPATED, CLAIMS 23-27 WERE INVALIDATED BECAUSE OF THE UNFOUND DRAWINGS -- PLAINTIFF CHALLENGES DEFENDANTS TO STATE THAT AMTOTE DID NOT ACQUIRE THE DRAWINGS WHEN THEY ACQUIRED THE FIRST TOTE AND THE PROTOTYPE -- BURDEN ADMITTEDLY ON THEM

Defendants did not seek discovery of prototype documents until March 1972 (although the action was filed in November 1967). In March 1972, Digitronics threw open its files, which defendants searched for about four days. Defendants' statement "total lack of effort made by plaintiff to locate prototype documentary evidence" is misleading. The unavailability of such documentation from Digitronics is readily explained by the intervening nine years, after the spectacular demonstration of the 20-TIM First Tote in March 1963 made the feasibility prototype

valueless. It was considered a piece of junk. (A1106 LyX403) Also see AnsBr37 and note defendants' lack of response.

That defendants were able to amass a considerable amount of evidence, that the best evidence of what was in the feasibility prototype was the prototype itself in the possession of defendants, and Weida's testimony of "unshrinking frankness" serve to dramatize the punitive nature of the Lower Court's holding Claims 23-27 invalid for failure to locate the drawings or "adequately" explain why. (A293 F47) That was grossly unjust and reversible error -- especially since defendants had the burden of proof.

Judge Dooling only invalidated Claims 20-22 on the basis of anticipation, not Claims 23-27. (A293 F43)

Also note that defendants made no effort to controvert any of the facts itemized at P1Br35 as to the details of the prototype -- especially that the Hohmann TIMs could not be used together (as required by Claims 20-25) and had no rejection signal responsive means (as required by Claims 23 and 26-27).⁸ Moreover, there is no finding by the Court that the prototype had "interrogating means" for interrogating the ticket issuing machines (as required by Claims 24-25). See A287 F39. In fact, most of plaintiff's Point F is unresponded to.

While defendants say that they never had a set of drawings in their possession it is uncontroverted that they had the prototype itself, which provided all of the details. And they admit they had the burden to prove the details of the prototype.

8. The Hohmann TIM patent, PX99 (A449), Fig. 6 shows the "Clear" key for unlatching latched keys in the case of a rejection (Col. 10, lines 42-51 of PX99). There was no use for the prototype to send a rejection signal. The Bell Punch TIMs were not received by Digitronics until December 1962 (A92-93 M54-55). The third TIM referred to at Weida 1750, 1754-55 was a later-acquired 1939 Western Tote machine (A1440PX111) and there is nothing in the record about it having "rejection signal responsive means for unlatching any latched switches." Even if it did, there were no signal transmission means in the prototype to operate it. And there is nothing in the record that two or more TIMs were ever used simultaneously.

And since it is uncontroverted that accused infringer Amtote (A1183) acquired the First Tote and the prototype, including the Hohmann TIMs, from Roosevelt Raceway, surely Amtote acquired the First Tote drawings to service the First Tote. Amtote helped defendants at the trial by supplying their witness Fosse, and made the prototype available to defendants and not to plaintiff.

PLAINTIFF CHALLENGES DEFENDANTS TO STATE THAT AMTOTE DID NOT ACQUIRE THE SET OF PROTOTYPE DRAWINGS ORIGINALLY WITH THE PROTOTYPE WHEN AMTOTE ACQUIRED THE FIRST TOTE AND THE PROTOTYPE.⁹

A great injustice was done by the Lower Court in invalidating Claims 20-27, especially Claims 23-27, because of plaintiff's failure to find the prototype drawings, or "adequately" explain why, especially when the burden of proof was admittedly on defendants.

G. FEASIBILITY PROTOTYPE WAS NOT A PRIOR INVENTION AND THUS IS NOT PRIOR ART BECAUSE, BEING COMMERCIALY INCOMPETENT, IT WAS NEVER REDUCED TO PRACTICE (PlBr39-44)

DEFENDANTS' MAIN ANSWER (AnsBr64-66)

Judge Dooling did not hold the prototype to be a "prior invention" under § 102(g), so conception and reduction to practice is immaterial. The prototype was "critical prior art" under § 102(a) and § 102(f). The prototype was "known" and "used" by others, including the patentee Weida, before any work on the First Tote, and was the work of others than the named patentees. The demonstrations of the prototype clearly verified that the subject matter of broad claims 20-27 was operable and commercially marketable, so was reduced to practice under Timely.

9. Judge Dooling denied plaintiff's motion, after the judgment, to reopen discovery to seek the missing drawings. Thus, plaintiff had no meaningful way to find out whether adversary Amtote had acquired them. (A1356)

PLAINTIFF'S MAIN ANSWER

Judge Dooling found that Weida did substantial work on the prototype including completing the construction, correcting design deficiencies, including blunders in logic detail, and debugging the system. (A88 M50, A100-101 M62-63, A288 F40). That was a great deal of work even though Judge Dooling (incorrectly) held that it did not reach the (low) threshold of joint invention. So the prototype was not "known or used by others", as required by § 102(a), because patentee Weida knew and used it.

Y. PATENTEES COMPLIED WITH § 102(f) BECAUSE THEY WERE THE "AUTHORS" OF THE FIRST TOTE DESCRIBED AND CLAIMED IN THE SPECIFICATION

Defendants concede that the feasibility prototype is not a prior invention under § 102(g). They now rely on § 102(a) and § 102(f), although neither section is cited by the Lower Court for invalidating any claim.

There is very little case law on § 102(f), apparently because it does not pertain to novelty, i.e. prior art. According to the Commentary On the New Patent Law by P. J. Federico, 35 U.S.C.A. §§ 1 to 110, page 19:

Paragraph (f) states that a person shall not be entitled to a patent if "he did not himself invent the subject matter sought to be patented." This paragraph is perhaps unnecessary since under section 101 it is "Whoever invents..." who may obtain a patent and later sections provide that the inventor must apply for the patent and execute an oath of inventorship. However, it emphasizes that the inventor must be the one to apply for a patent. The words "invent" and "inventor" as used in sections 101 and 102, as has been stated, do not in themselves import any meaning of novelty, and are used in the sense of "is the author of" and "author", respectively, as distinguished from copying from another....

The "oath of inventorship" required by the Patent Office states that the applicants "verily believe themselves to be the original, first and joint inventors of the improvement in [title of the invention] described and claimed in the annexed specification...." Title 37, Code of Federal Regulations, Patents, Trademarks

and Copyrights, Forms For Patent Cases, Sec. 3.11 Oath to accompany application for patent. That was the form of the oath used by patentees. (A1429 PX2-68)

There is "a prima facie presumption that [the applicant] was the original and first inventor of the device described in his application, and the burden to establish the contrary rests on the defendants." International Carrier-Call and Television Corporation v. Radio Corporation of America, 142 F.2d 493, 495, 61 USPQ 392, 394 (2d Cir. 1944); Plantronics, Inc. v. Roanwell Corp., 403 F.Supp. 138, 187 USPQ 489 (S.D.N.Y. 1975).

It is uncontroverted that the improvement described and claimed in the patent specification is the First Tote and that the First Tote was invented by the named patentees.

Moreover, "it is fundamental that claims are to be construed in the light of the specifications and both are to be read with a view to ascertaining the invention." United States v. Adams, 383 U.S. 39, 49, 148 USPQ 479, 482 (1966) And where the claims are in the form "means ... for performing a specified function", as here, 35 U.S.C. 112, paragraph three, mandates that they "shall be construed to cover the corresponding structure, ... described in the specification."

The named patentees are the true inventors (authors) of the First Tote described in the specification so that § 102(f) is clearly complied with.

After the rendering of judgment in the Court below, defendants moved to amend the judgment to state that the claims in suit were invalid because of improper inventorship under § 101. The Lower Court denied that motion. Memorandum and Order of January 13, 1976, page 2. (A299) In correctly

rejecting invalidity under § 101, the Lower Court rejected invalidity under § 102(f) and clearly (but erroneously) relied on prior inventorship under § 102(g).

§ 102(f) is a bar to a patent, but not as prior art any more than § 102(c) -- he has abandoned the invention -- is a prior art defense. A bar, yes, but prior art, no. What § 102(f) means is that if the subject matter described and claimed in the specification was copied from another; he is not the author, he is not the true inventor, he did not originate that subject matter. But even if he were the originator, the author, he is not entitled to a patent under § 102(g) if he is not the first inventor -- i.e. there is a prior invention, which is prior art.

But note that under § 102(g) even a later originating inventor can obtain a valid patent if the first inventor "abandoned, suppressed or concealed it." Under defendants' interpretation of § 102(f) that condition would be nullified because the second "inventor" "did not himself invent the subject matter sought to be patented."

It is clear that what Judge Dooling meant in holding the prototype to be a prior invention was an invention conceived and reduced to practice before the complete conception of the First Tote. But he legally erred in confusing construction of the prototype with the legal concept of reduction to practice. The Demonstrator-prototype clearly was commercially incompetent. See PlBr40-42, substantially unresponded to by defendants.

Z. IN EFFECTIVELY CONCEDED THE INAPPLICABILITY OF PRIOR INVENTION UNDER § 102(g) DEFENDANTS CONCEDED THAT ANY INVENTION IN THE PROTOTYPE WAS NEVER REDUCED TO PRACTICE THUS CONCEDED THAT THERE IS NO BAR UNDER § 102(a)'s "THE INVENTION WAS KNOWN OR USED BY OTHERS", WHICH REQUIRES REDUCTION TO PRACTICE

Since the feasibility prototype was never reduced to practice, then § 102(a) is inapplicable. § 102(a)'s "the invention was known or used by others" requires

that the prior invention be reduced to practice. Thus, in I Deller's Walker on Patents 255 (2d ed. 1972):

In reference to the word "known," as used in the statute, the Court of Appeals for the Second Circuit (citing Block v. Nathan Anklet Support, 9 F.2d 311, CA2 (1926)) has pointed out that the word "has acquired a somewhat esoteric meaning, imparted by the courts to accomplish the purpose of the statute. Mere acquaintance with the invention, even if disclosed is not enough; nothing short of reduction to practice will do***."

In Coffin v. Ogden, 18 Wall. 120, the Supreme Court stated:

The invention or discovery relied on as a defense must have been complete, and capable of producing the result sought to be accomplished; The law requires not conjecture but certainty. If the question relates to a machine, the conception must have been clothed in substantial forms which demonstrate at once its practical efficiency and utility.

Also see Stearns v. Tinker & Razor, 252 F.2d 589, 116 USPQ 222 (9th Cir. 1957) for the § 102(a) requirement of reduction to practice.

The Demonstrator-prototype clearly did not demonstrate the practical efficiency and utility of any completely conceived invention it contained -- and certainly not in its intended environment, the racetrack. It was commercially incompetent.

And Defendants have effectively conceded that there was no reduction to practice of the prototype design. § 102(a) is clearly inapplicable.

AA. § 102(a) IS ALSO NOT A BAR BECAUSE THERE WAS NO PUBLIC KNOWLEDGE OR USE OF THE PROTOTYPE

The reviser's note on Section 102 of the Patent Act of 1952 contains the following statement (35 U.S.C.A. 446):

No change is made in these paragraphs [102(a), (b), and (c)] other than that due to division into lettered paragraphs. The interpretation by the courts of paragraph (a) as being more restricted than the actual language would suggest (for example, "known" has been held to mean "publicly known") is recognized but no change in the language is made at this time.

So § 102(a) is also not a bar to the validity of the claims in issue because there was no public knowledge of its design.

H. INITIAL DESIGNERS OF THE FEASIBILITY PROTOTYPE ARE JOINT INVENTORS OF THE FIRST TOTE AND SHOULD BE ADDED TO THE PATENT UNDER 35 U.S.C. § 256 (PlBr44-48)

DEFENDANTS' MAIN ANSWER (AnsBr66-68)

Finding 43 contradicts plaintiff's statement that "no claimed invention was completely conceived in the feasibility prototype." In accordance with Finding 40, "none of the named patentees made any conceptual contribution to any of the electronic totalisator subject matter incorporated in the 'Demonstrator' electronic totalisator system." None of the named patentees being true inventors under § 102(f), the true inventors cannot be substituted for the named patentees under § 256.

PLAINTIFF'S MAIN REPLY

AB. SINCE THE NAMED PATENTEES ARE TRUE JOINT INVENTORS OF THE PATENT UNDER § 102(f) AND DEFENDANTS DO NOT QUESTION THE JOINT INVENTIVE CONTRIBUTIONS TO THE FIRST TOTE BY ITS INITIAL DESIGNERS, THEY CAN BE ADDED TO THE PATENT

Finding 43 states that the "Demonstrator or prototype included all of the subject matter recited in Claims 20, 21 and 22." (A291) There is no such finding concerning Claims 23-27, so the named patentees are correct if only for Claims 23-27.

And Finding 40 (A288) -- that none of the named patentees made any conceptual contribution to the prototype -- is irrelevant to the question whether the prototype's designers made any joint invention contribution to the First Tote, which defendants do not question. So Shaw and Kielsohn can be added to the patent as named patentees (not substituted for them), whether or not Weida made a joint inventive contribution to the prototype.

I. HOW THE NOVEL CLAIMED INVENTIONS SOLVED THE PRIOR ART RACETRACK TOTALISATOR PROBLEMS AND SATISFIED THE LONG-FELT NEED FOR ECONOMICALLY AUTOMATED DAILY DOUBLE BETTING (PlBr49-69)

DEFENDANTS' MAIN ANSWER (AnsBr71)

(a) The "novel claimed inventions" were found to be incorporated in the demonstrator; (b) the Court below specifically found that there was no long-felt need; and (c) the daily double problem and any purported solution thereto relate to claims not in issue.

PLAINTIFF'S MAIN REPLY

(a) Only Claims 20-22 were found to be incorporated in the prototype.

(A29 F43) The Lower Court erred because there was no claimed "plurality of ticket issuing machines" ever simultaneously used with the prototype. (PlBr39)

(10) The Patent Law Does Not Recognize Unpublic Impractical Machines Like the Prototype

No invention in the prototype was completely conceived because no invention was ever reduced to practice, being commercially incompetent. See Points G and Z. Conception in the patent law is defined in I Deller's Walker on Patents 191-92 (2d ed. 1972) as

the formation in the mind of the inventor of a definite idea of a complete and operative invention as it is thereafter to be reduced to practice.

There being no reduction to practice of the prototype, there could have been no complete and operative invention capable of being reduced to practice, so there was no complete conception. In other words, the Patent Law does not recognize unpublic impractical machines, like the prototype. See Points Z and AA.

(b) The Court below found only that there was no long-felt need for electronics to handle parimutuel betting at racetracks (A284 F32), but made no finding that there was no long-felt need for economically automating daily double betting -- which there clearly was. (PlBr5-7)

(c) Defendants' no daily double issue is a red herring. See Point S.

(1) Heart of the First Tote -- Multi-Function Generating Means For Generating Signals Representing the Particular Ticket Issuing Machine (TIM) (PlBr49-52)

DEFENDANTS' MAIN ANSWER (AnsBr71-72)

There is no record support for equating Lease's "differential sequence access to the same memory for computational procedure" esoteric terminology with the claim 20(B) subject matter, which was anticipated by the prototype-demonstrator. Plaintiff gratuitously includes a host of alleged functional and operational relationships into the broadly stated means terminology. Such subject matter including the use of core memory units is disclosed in the Westbury brochure. Plaintiff ignores the structural and operational realities between such claims and the prior art electro-mechanical totalisators.

PLAINTIFF'S MAIN REPLY

(11) Multi-Functions of the Claim 20(B) TIM Number Signal Generation Means and Novelty Over the Prior Electromechanical Prior Art Are Not Questioned by Defendants

The special relevance of the Lease letter is not only its content but the fact that it was in July 1960 and from a person presumably of ordinary skill in the totalisator art. What he meant is explained at PlBr49. Defendants do not question that interpretation. Neither do they question the factual basis for the four functions attributable to the Claim 20(B) TIM number signal generation means. Neither do they question the novelty of Claims 20-22 over the prior art electromechanical totalisators. Nowhere do they point out in that prior art where there is TIM number signal generation means or a TIM memory. They only point to the demonstrator-prototype as anticipating prior art.

The demonstrator-prototype did not anticipate anything. See Points G, Y, Z and AA.

As for the Westbury brochure, defendants do not point to any disclosed means to enable practice of any claimed invention -- and neither did the Lower Court. See PlBr41, note 6. The last word on the Westbury brochure should be defendant NYRA's parimutuel manager in November 1962:

... I had heard a lot of interesting conversation relative to what was being done in the totalizator field, and the many advancements that had been projected ... were music to my ears, but I had to inform these gentlemen that I could not visualize much from an artist's conception or a brochure, also that conversation would not suffice for me. I felt I was qualified to speak for NYRA that when any company had completed any tote which they thought would be of interest to us, we would go anywhere at any time to look at it. (A513 PX129-3)

(2) How Daily Double Betting Was Economically Automated by the Claims 20-22 Invention (PlBr52-55)

DEFENDANTS' ANSWER (AnsBr72-73)

This is no more than a shallow and specious attempt to equate the so-called daily double problem and solution with claims 20-22 rather than with the non-elected and admittedly non-infringed daily double claims 31-33.

PLAINTIFF'S MAIN ANSWER

(12) Defendants Do Not Question That the First Tote Economically Automated Daily Double Betting and That the Claims 20-22 Invention is Faster, More Compact, More Accurate, More Flexible and Less Expensive Than Was NYRA's Electromechanical Tote

The defendants' no daily double issue is a red herring. See Point S. And if the nine indicia of nonobviousness (Point B, PlBr20-21) are attributable to any invention it must be to the Claims 20-22 Invention. Surely no indicia of nonobviousness is significant with respect to an invention (Claims 31-33) which is not used.

Defendants do not question that the Claims 20-22 Invention "is faster, more compact, more accurate, more flexible ... and less expensive" than was NYRA's electromechanical tote. (PlBr54)

Neither do the defendants question that the "TIM number generation means facilitated the use of the claimed magnetic core memories (Claims 21, 22) ..., plus the advantages of the novel but inexpensive TIM memory." (PlBr54-55)

And neither do they question how the use of magnetic core memories economically automated daily double betting. (PlBr54)

Most importantly, defendants do not question that the First Tote economically automated daily double betting.

- (3) Additional Advantages of the Claims 20-22 Invention -- Faster, More Compact, More Accurate, More Flexible, More Reliable and Less Expensive (PlBr55)

DEFENDANTS' ANSWER (AnsBr73)

Entirely apart from reliability which was based upon the use of duplexed components as embodied in non-elected and admittedly non-infringed claims 1-19, the remaining advantages were, as expressly found in Finding 22, no more than the recognized advantages of the electronic upgrading of any data processing system.

PLAINTIFF'S MAIN ANSWER

- (13) If These Advantages Were Only a Question of Electronics, Available From At Least the Mid-1950's, Why Did Not Defendant Atusa Build Its Own All-Electronic Tote to Break Amtote's Monopoly, Before the First Tote Did in 1963?

Defendants' assertion that reliability is based upon the use of duplexed components specifically claimed in noninfringed claims 1-19 is another red herring. See Point S. Each claim is a separate grant. PlBr58, note 10. If Claims 1-19 were not in the patent it would make no difference with respect to the validity of Claims 20-22. And duplexing only aggravates infringement.

But what is not questioned by defendants is that the Claims 20-22 Invention makes dual processing practical and achievable in a reasonable way, not only because of the use of electronics, but by using core memory with a single aggregating (adding) element shared by the many registers required; and also by providing a single path to the aggregating system on each side. PlBr55.

And they do not question that the Claims 20-22 Invention broke Amtote's monopoly, because it was Atusa who did that with the NYRA Tote and by infringing the patent so flagrantly with their PDP-8 Tote.

And if all of these advantages were only a question of electronics, available

since at least the mid-1950s (A285 F34), then why did not defendant Atusa build its own all-electronic tote to break Amtote's monopoly, before the First Tote did in 1963?

(4) How Judge Dooling (Erroneously) Invalidated Claims 20-22 on Their Face (PlBr56-58)

DEFENDANTS' ANSWER (AnsBr73)

This is no more than a further reassertion of the erroneous mis-characterization of the acts of the Court below that were treated earlier in the answer to Points A and B.

PLAINTIFF'S MAIN ANSWER

See Points N-S.

(14) Defendants Have Not Clearly Supported Judge Dooling's Disregard of Entire Claims, Claims 21 and 22, as "Adding Nothing" and Claim Language, Part of Claim 20(C), as "Null Language"

It should be noted that defendants have not clearly supported Judge Dooling's disregard of entire Claims 21 and 22 as "adding nothing" and Claim 20(C)'s "only if the transaction is correct" as "null language." Since each claim is a separate patent grant (PlBr58, note 10), it is as if Judge Dooling disregarded two separate patents and part of a third.

(5) All-Electronic Means of the Claims 20-22 Invention Further Enhances Invention (PlBr58-61)

DEFENDANTS' MAIN ANSWER (AnsBr73)

This section again mischaracterizes the action taken by the Court below and further is in complete derogation of the explicit broader and contrary teaching of the patent specification, where plaintiff's difficulties lie.

PLAINTIFF'S MAIN REPLY

- (15) Defendants Do Not Question That Judge Dooling Found Both That the Specification was Drawn From the First Tote and Reflects Its Electronic Makeup and That Nearly All of the Means Elements of the Claims 20-22 Invention are Electronic
-

Defendants do not question that Judge Dooling specifically found that all of the means elements recited in Claims 20-22 were electronic; except that he made no finding for 20(C)'s transaction calculating means which Claim 21 defines as electronic. And so does the specification at column 18, lines 16-40 (P1Br59-60) by a description which could only be an electronic magnetic core memory with associated electronic updating apparatus.

Neither do defendants question that Judge Dooling found that the specification was drawn from the First Tote and reflects its electronic makeup. (P1Br59)

It strains credulity to argue that the patentees intended to cover the prior electromechanical technology which they were striving to obsolete.¹⁰

- (6) Synergistic Results of Multi-Function TIM Number Signal Generation Means Still Further Enhances Invention of Claims 20-22 Invention (P1Br61-63)
-

DEFENDANTS' ANSWER (AnsBr73-74)

This specious exercise in semantics was specifically rejected by the Court below as a matter of fact (supra pp. 38, see pp. 28-40). As Judge Dooling noted -- "A special ingenuity of indirection would be required to do it any other way." (Op. 180; JAX , supra p. 38).

PLAINTIFF'S MAIN REPLY

- (16) The Lower Court Erred in Requiring Unobvious Utility for Synergism and Compounded that Error with a Technical Oversight Concerning the Multi-Function TIM Number Signal Generation Means
-

It should first be noted that defendants do not question the four separate functions attributed to the novel TIM number signal generation means of Claim 20(B).

10. If the patentees had burdened the Patent Office and the courts by filing a jumbo "detailed logical and schematic description" instead of the compact specification specifically allowed by the Patent Office (A163 M125), there would have been no question that they intended to cover only electronic subject matter.

Also see Point I(17), infra.

They only repeat Judge Dooling's conclusion that a "special ingenuity of indirection would be required to do it any other way." But that conclusion only follows from Judge Dooling's ABC data processing error compounded by a highly educated wisdom of hindsight.¹¹

And his error is further compounded by a legally erroneous premise which almost immediately precedes the no special ingenuity quote: "No unobviously useful economy exists in employing scan counter SKA as such a signal generation means as it may be to feed both the scanner (decoder) SCA and the decoder DEC." (A217 M179)¹² Synergism only requires that the sum of the effects of a combination of means exceed the sum of the separate effects. Here a single means has four effects or functions, which is much more than the single effect or function normally attributed to it. Whether such a multi-effect result is obvious or unobvious is not determinative of synergism. Obviousness is only a test of the whole combination of recited elements; § 103.

And his error is still further compounded by a technical oversight illustrated by the concluding sentence in his "synergistic" effect discussion (A219 M181):

The allegedly "synergistic" effect is, then, the common attribute of all EDP systems -- that they are energized from a common source and ordered in real time by a common step signal.

Just a glance at the patent's Figures 2 and 3 (A303 PX1, Sheet 3) will show a Step Pulse Generator STP (Fig. 3, top center) completely separate from Scan Counter SKA (Fig. 2, right center). The Step Pulse Generator STP does order the system in real time, including stepping the Scan Counter SKA at the appropriate

11. Why didn't Armote or Atusa build a totalisator (electronic or electromechanical, or hybrid) with TIM number signal generation means if it was so obvious?

12. There is no requirement of unobvious utility for patentability, only plain utility. "[P]atentability is dependent upon three explicit conditions: novelty and utility as articulated in § 101, and § 102, and nonobviousness, the new statutory formulation, as set out in § 103." Graham at 383 U.S. 12, 148 USPQ 464-465.

time to step to the next TIM to be scanned. But Step Pulse Generator STP does not in any way identify the scanned TIM, only the added Scan Counter SKA does that. Each of the four functions of Scan Counter SKA (the TIM number signal generation means of Claim 20(B)) is attributable only to SKA and not to STP.

While admittedly not required for patentability of a combination of new claim elements, synergism is present, is attributable to the novel TIM number signal generation means, and so enhances invention of Claims 20, 21 and 22, each of which specifically recites such means.

(7) High-Speed Scanning of Low-Speed TIMs Using Multi-Function TIM Number Signal Generating Means -- the Claims 24-25 Invention (PlBr63-65)

(8) Scratched Horse Sub-System (Claim 23) and Error Checking Sub-System (Claims 26-27), Both Novel, Supplement Claim 20(C)'s "Issuing a Ticket Only if the Transaction is Correct"(PlBr66-68)

DEFENDANTS' ANSWER (AnsBr74)

This is no more than a reassertion of matters decided adversely to plaintiff below as a matter of fact (supra pp. 34-36).

PLAINTIFF'S MAIN REPLY

(17) Claims 24-25 Are Construed to Include the Novel TIM Number Signal Generating Means; and All of the Claims Are Limited to Solid State Circuits Or Equivalents So that Any Electromechanical "First Tote" Would Not Infringe

At AnsBr35, the defendants state that "The subject matter of these claims were likewise found in Handley. (Op. 197)" That is misleading. What Judge Dooling found was:

Handley does provide scanning means of the required kind unless the scanning means must generate a TIM number. But the claims do not in terms or in reason require that the scanning generate a TIM number. (A235 M197)

That is an error. § 112, par. three mandates that the scanning means "cover the corresponding structure ... in the specification and equivalents thereof."

And the Supreme Court stated, Adams, supra, at 383 U.S. 49 , 148 USPQ 482, that "it is fundamental that claims are to be construed in the light of the specifications and both are to be read with a view to ascertaining the invention."

[T]he fact that the Adams battery is water-activated sets his device apart from the prior art. It is true that Claims 1 and 10, *supra*, do not mention a water electrolyte, but, as we have noted, a stated object of the invention was to provide a battery rendered serviceable by the mere addition of water. Adams, Id.

The Adams claims were found valid by the Supreme Court.

The situation with respect to Claims 24-25 is similar. TIM number signal generation means sets the system apart from the prior art. It is true that Claims 24-25 do not mention such means, but a stated object of the invention was "to provide high-speed scanning means for interrogating a plurality of relatively slow operating ticket issuing machines..." (A306 PX1, Col. 1) That is the TIM number signal generation means.

At AnsBr36, defendants state that plaintiff is on the horns of a dilemma in construing Claims 20-27. There is no dilemma. § 112, par. three, mandates that they be construed to cover the disclosed structure and equivalents. Thus, the claims are limited to means utilizing the disclosed solid-state electronic structure and their equivalents for performing the recited functions. If defendants want to avoid the patent they need only build an electromechanical "First Tote." Electromechanical structure is not the equivalent of solid-state structure.

Similarly, Claims 23 and 26-27 are also novel over electromechanical Handley, moving the inquiry concerning Claims 23-27 to § 103 and the overwhelming circumstantial evidence of nonobviousness.

(9) Principal Prior Art Patent (Handley) Is Inoperative Thus Clinching Inventiveness of Claimed Inventions (PlBr68-69)

DEFENDANTS' MAIN ANSWER (AnsBr74-75)

The Court actually stated (Op. 197):

The acknowledgment circuitry of Handley is not assured against certain conceivable errors, but it is straightforward acknowledgment means operable in the generality of instances, and it fully responds to claims element 23 (E).

Handley was in no way inoperative.

PLAINTIFF'S MAIN REPLY

(18) Parimutuel Wagering Systems Cannot Tolerate Errors in Processing Wagers and Inoperative Handley Makes Errors

Defendants do not deny that Handley is a paper patent.¹³ They could not because their own expert witness admitted that Handley could issue a ticket if the transaction were incorrect; and if it had been built they would have discovered and no doubt corrected the errors.

And "means operable in the generality of instances" is hardly a system which "can neither tolerate down time during the wagering nor errors in processing wagers." (A123 M85).¹⁴

Whether Handley is only generally inoperative or just plain inoperative, it surely does not negative novelty and should provide additional support for non-obviousness of the patent. PlBr69.

In any event, any doubt about validity should be resolved in favor of the patentees. Gross v. JFD Mfg. Co., Inc., 314 F.2d 196, 198, 137 USPQ 1, 3 (2d Cir. 1963), cert. denied, 374 U.S. 832, 137 USPQ 913 (1963).

13. A "paper patent" has never been reduced to practice. It has no existence apart from the patent certificate. CMI Corp. v. Lakeland Construction Co., Inc., ___ F.Supp. ___, 184 USPQ 721, 725 (N.D. Ill. 1975).

14. One wouldn't want his Pacemaker to be "operable in the generality of instances."

J. SOFTWARE PROGRAMMED GENERAL-PURPOSE COMPUTER IS A NEW MACHINE SYSTEM AND THE ACCUSED NYRA AND PDP-8 TOTALISATORS INFRINGE CLAIMS 20-27 BECAUSE THEY WERE NEWLY-DESIGNED AND PERFORM ALL OF THE CLAIMED FUNCTIONS (PIBr70-72)

DEFENDANTS' MAIN ANSWER (AnsBr76-78)

The issue is whether an apparatus claim (as distinguished from a "process" claim) can be infringed where the recited elements in the accused software programmed general purpose computer exist only in sequenced transitory states through the "program" instructions and do not coexist as physically identifiable entities at any given instant of time. Plaintiff admits that "In effect, the general-purpose computer is a 'storehouse of parts' and the stored program creates 'instant hardware' by sequentially connecting the computer parts into a new combination -- i.e., a new machine." It is the admitted lack of physical coexistence at any given instant of time that is the crucial point of distinction.

Judge Dooling clearly adopted defendants' position as evidenced by his careful use of the word permanent as distinguished from sequenced or transitory. There is no error in "technological fact."

PLAINTIFF'S MAIN REPLY

AC. DEFENDANTS DO NOT QUESTION THAT A SOFTWARE PROGRAMMED GENERAL-PURPOSE COMPUTER IS A NEW MACHINE SYSTEM AND THAT THE NYRA AND PDP-8 TOTALISATORS WERE NEWLY-DESIGNED AND PERFORM ALL OF THE CLAIMED FUNCTIONS

And plaintiff understands Judge Dooling to have found that the accused totes embody physically "the unions of means of the patent claims in suit...."

(A246M208) when he stated that there is "no logical defect in plaintiff's argument" (A249 M211), thus rejecting defendants' position.

AD. THE ACCUSED TOTES ARE THINGS WHICH FUNCTION WITHOUT HUMAN INTERVENTION SO THE NECESSARY MEANS MUST COEXIST

"A machine is a thing. A process is an act, or a mode of activity."

(AnsBr77) The accused totes are things. There are no humans inside their cabinets. Once a TIM is operated the accused totes perform all of the claimed functions without human intervention. Thus, they must initially have all of the necessary means to do that, so the necessary means must coexist.

AE. SINCE SEQUENTIALLY-FUNCTIONING HARD-WIRED PROGRAMMED
COMPUTERS ADMITTEDLY CAN INFRINGE APPARATUS CLAIMS
SO CAN SEQUENTIALLY-FUNCTIONING SOFT-WIRED PROGRAMMED
COMPUTERS

Defendants' expert witness, Dr. Highleyman, explained what "do not coexist as physically identifiable entities at any given instant of time" means (A1311 HiD3051):

... if they existed simultaneously, that means they could operate simultaneously.... and since in a computer system of the type used in the NYRA totalisator the computer was capable of doing only one function at a time, ... there is no conceivable way in which it could be performing both of these functions at the same time. And since the two means could not possibly operate at the same time, therefore I would have to conclude that in no sense of the word do they exist at the same time. ***

THE COURT: The software of each of those would exist as a set of words in the core memory?

THE WITNESS: That is correct.¹⁵

So the crucial point of distinction turns on the technological fact that a programmed computer performs programmed functions in a sequence. BUT THAT IS EQUALLY TRUE FOR BOTH SOFT-WIRED AND HARD-WIRED PROGRAMMED COMPUTERS. Since defendants admit that a hard-wired programmed computer can infringe apparatus claims, their crucial distinction turns out to be without a noninfringing difference.

Many machines perform sequential functions. In Gibbs v. T.Z.R. Amusement Corp., 14 F.Supp. 957, 29 USPQ 518 (E.D.N.Y. 1936) the court held sequentially-functioning apparatus claims (on a pinball game machine) valid and infringed.¹⁶

15. Weida disagreed with Highleyman. "... I do believe that since the core memory does contain the entire software necessary to achieve the required functions, ... that all of the mechanism, if you will, necessary to perform any of these functions is in deed simultaneously present." (A1337 WeRBD3597, A1338 WeRBD3614-19)

16. Validity and infringement of the same patent was affirmed by the Supreme Court. Faulkner v. Gibbs, 170 F.2d 34, 79 USPQ 158 (9th Cir. 1948), aff'd 338 U.S. 267, 83 USPQ 192 (1949).

**AF. IF INFRINGEMENT DEPENDS ON ELEMENT COEXISTENCE THEN
AT LEAST CLAIMS 20, 24, 25, 26 AND 27 ARE INFRINGED --
ESPECIALLY CLAIM 24 WHICH DOES NOT USE THE COMPUTER**

There is no finding concerning the physical coexistence of the means elements of any of the Claims 20-27. With respect to both the NYRA and PDP-8 Totes:

Claim 20 (PlBr56, n.9, A423 PX52, A424 PX62) -- Only element 20(C) is in the computer so at the instant that exists it coexists with continuously existing elements 20(A) and 20(B). Element 20(A) is the hard-wired TIMs and element 20(B) is in the hard-wired scanner. Functions of both Claims 21 and 22 are performed sequentially.

Claim 23 (PlBr66, n.17, A1432 PX53, A1437 PX64) -- Functions of Claim 23 possibly are performed sequentially but the record is not clear.

Claim 24 (AnsBr63, n.14, A1433 PX54, A1438 PX65) -- None of the elements is in the computer so all elements always coexist. Claim 25 is only one element so when it exists in the computer it coexists with the remaining elements of parent Claim 24.

Claim 26 (AnsBr67, n.18, A1434 PX55, A1439 PX66) -- TIM element 26(A) always exists. Elements 26(B) and 26(C) are employed alternatively (depending on whether a rejection or acknowledgment signal is transmitted to the TIM) so all elements coexist. Single element Claim 27 details element 26(B) of parent Claim 26 so all elements coexist.

In sum, if infringement is dependent on claim element coexistence, then at least Claims 20, 24, 25, 26 and 27 are infringed by the accused totes -- especially Claim 24 which does not use the computer.

- (1) Software Programmed General-Purpose Computer Is More Permanent Than an Incomplete Unprogrammed Computer Having No End Use (PlBr72-73)
- (2) Software Programmed General-Purpose Computer Is a New Machine According to the Supreme Court in the Recent Johnston Case (PlBr73-75)
- (3) Machine Need Not Be Permanent to Infringe a Machine System Patent -- Otherwise There Is a Denial of Equal Protection of the Patent Laws (PlBr75-76)

DEFENDANTS' MAIN ANSWER (AnsBr78-79)

Permanence in the sense of being able to repeat a sequence of operations to momentarily create transitory functioning components from a "storehouse of parts" is not relevant. Likewise, whether a software programmed general purpose computer is a "new" machine is immaterial. Johnston does not involve infringement. Decca does not appear to have involved sequenced transitory existence of component elements as a factor in the resolution of the infringement issue. The "equal protection" section is wide of the basic issue.

PLAINTIFF'S MAIN REPLY

- (4) The Accused Totalisators Perform Their Functions Simultaneously as a Practical Matter -- Defendants' Highly Technical Time Distinction Is Without a Practical Difference

The sequenced functions in the accused totes are performed almost instantaneously -- certainly faster than the eye can notice. In defendant Atusa's "THE ALL ELECTRONIC TOTALISATOR using PDP-8 Computers" (A1436 PX57-3) the whole action is described:

This whole action takes place almost instantaneously and if the selection the Seller has made is correct a ticket is issued without any delay. If the selection the Seller has made is wrong, the depressed buttons reset immediately.

The NYRA Tote is even faster. As a practical matter, all of the functions are performed simultaneously in both totes. Defendants' noninfringement argument is based on a highly technical time distinction without a practical difference.

17

- (5) In the Decca Case the Functions of Different Elements of an Apparatus Claim Were Performed by a Software Programmed Computer -- Held Infringed.
-

The Findings of Fact in Decca (P1Br75) disclose that Clauses 6 and 9 of apparatus claim 1 were read on a software programmed general-purpose computer of the accused system, in finding infringement.

K. EQUIVALENCE OF HARDWARE AND SOFTWARE MEANS TO PROGRAM A COMPUTER IS GENERALLY RECOGNIZED SO THAT A SOFTWARE PROGRAMMED COMPUTER PERFORMING THE SAME FUNCTIONS AS A COMBINATION OF MACHINE MEANS IS AN INFRINGEMENT UNDER THE DOCTRINE OF EQUIVALENTS (P1Br77-78)

L. PROGRAMMABLE COMPUTER HAS A CHANGEABLE "RULE OF ACTION" AND IF IT CAN BE USED TO INFRINGE WITH IMPUNITY TECHNOLOGICAL PROGRESS WILL BE IMPEDED AND THE SUPREME COURT'S JOHNSTON CASE UNDERMINED (P1Br79-81)

M. LOWER COURT'S RATIONALE OF NONINFRINGEMENT, THAT ALL OF THE TASKS OF THE PATENTED MACHINE SYSTEM ARE PERFORMED BY KNOWN COMPUTERS, IS FACTUALLY INCORRECT SO THAT THE NONINFRINGEMENT CONCLUSION SHOULD BE REVERSED (P1Br81-83)

DEFENDANTS' MAIN ANSWER (AnsBr79-80)

The "equivalence" argument begs the question. Johnston did not decide the question of "general patentability of computer programs" so how could it be "undermined?" Judge Dooling concluded that the sequenced operation of a software programmed computer lies in the realm of process claims.

PLAINTIFF'S MAIN REPLY

AG. DEFENDANTS DO NOT QUESTION THE EQUIVALENCE OF HARDWARE AND SOFTWARE; OR THAT A PROGRAMMABLE COMPUTER HAS A CHANGEABLE "RULE OF ACTION"; OR THAT NOT ALL OF THE TASKS OF THE PATENTED MACHINE ARE PERFORMED BY COMPUTERS SO THAT THE LOWER COURT'S RATIONALE FOR NONINFRINGEMENT IS INCORRECT

AH. IN AN AUTOMATIC SEQUENCING OPERATION A CAPABILITY OF IMMEDIATELY DETERMINING WHAT HAPPENS NEXT IS NEEDED AND CANNOT BE DONE UNLESS NECESSARY STRUCTURE COEXISTS IN TIME

See Brief Amicus Curiae for Digital Systems Corporation (DSC), pages 12-14.

17. Decca Ltd. v. The United States, 188 USPQ 167 (Ct. Cl. Trial Div. 1975), aff'd, 287 PTCJ A12 (July 9, 1976).

VIII. CONCLUSION OF REPLY

If it were obvious to design and construct a practical all-electronic totalisator which would economically automate the very burdensome manually-performed daily double bet processing, and if the technology to do so was available at least from the mid-1950s, then why did not Amtote do it to preserve its monopoly? Amtote obviously had the resources to get one improvement patent after another in electromechanical totalisators. And their research in all-electronic totes went back to 1945. The fact is that after experimenting for over 25 years, Amtote did not believe that a practical all-electronic tote could be built. And they discouragingly said so. It took the combination of Roosevelt Raceway's large financial gamble and Digitronics' inventiveness to build the First Tote, spectacularly demonstrated in March 1963 at Roosevelt Raceway.

It was the First Tote that paved the way to the breaking of Amtote's monopoly by defendant Atusa, first with its "revolutionary" NYRA Tote and then with its PDP-8 Tote.

This is the unusual case where a patent broke a monopoly. Plaintiff has waived its right to an injunction to encourage competition. It only seeks a reasonable royalty for the use of its claimed inventions.

This Court should order that the invalidity and noninfringement judgment be reversed and an accounting be had to determine a reasonable royalty and damages.

**IX. PLAINTIFF'S ANSWER TO DEFENDANTS' ARGUMENT
ON THE CROSS APPEAL**

**AI. PLAINTIFF DID NOT WITHHOLD FROM THE PATENT OFFICE ANY
INVALIDATING MATERIAL FACTS BECAUSE THERE ARE NONE**

With respect to plaintiff's antecedent activities, the best argument defendants can muster is with respect to the holding of Claims 20-22 as anticipated by the demonstrator-prototype. (A291 F43). As indicated in Points G (PlBr39-44), Y, Z and AA, the prototype is not prior art under § 102(g) or § 102(a), and is not a bar under § 102(f). Moreover, plaintiff makes what is believed to be a good argument that the plurality of ticket issuing machines required by Claims 20-22 was not fulfilled by the commercially incompetent prototype with a plurality of simulated machines which could not issue tickets. AnsBr38-39.

So there was no invalidating material fact to disclose to the Patent Office, or at worst there was an honest mistake.

The burden of proving an "exceptional case" under 35 U.S.C. 285 is a heavy one since that is a punitive remedy. It is up to the discretion of the Trial Judge. He found that (A253 M215):

... it cannot be said that the case was pursued in bad faith, or was so wholly devoid of substance that plaintiff could not fairly be supposed to be proceeding in good faith.

It is plaintiff's view that not only has it been proceeding in good faith, it should prevail -- especially on the demonstrator-prototype issue.

**AJ. AN ATTORNEY FEES AWARD FOR CONDUCT LESS THAN FRAUD
REQUIRES DELIBERATE MISREPRESENTATION TO THE PATENT
OFFICE OF A MATERIAL FACT -- WHICH DEFENDANTS HAVE
FAILED TO PROVE BY ANY STANDARD OF BURDEN**

"Fraud on the Patent Office would certainly be enough to make a case exceptional '[b]ut conduct short of fraud and in excess of simple negligence is also an adequate foundation for deciding that a patent action is exceptional.'"

Kahn v. Dynamics Corp. of America, 508 F.2d 939, 945, 184 USPQ 260, 264 (2d Cir. 1974)[citing Monolith Portland Midwest Co. v. Kaiser Aluminum & Chem. Corp., 407 F.2d 288, 294, 160 USPQ 577, 581 (9th Cir. 1969)], cert. denied, 95 S.Ct. 1657, 185 USPQ 505 (1975).

In Kahn, the plaintiff clearly commenced and litigated the suit in bad faith.

In Monolith, only when the court considered patentee's filing in the Patent Office of five affidavits, one of which was obtained under false pretenses and all of which contained "deliberate lies," did the court find the case "exceptional."

In Timely, supra, actual fraud was found. Defendants reference to Timely as "(subsequent to the decision below)" (p. 82) is misleading. They made substantially the same argument in their motion to amend the judgment. For the sake of brevity, plaintiff adopts the Lower Court's reasoning in Part (2) of its Memorandum and Order dated January 13, 1976 denying an award of attorneys fees. (A299-300)

An attorney fees award for conduct less than fraud requires deliberate misrepresentation of a material fact which leads to the improper issuance of the patent. That is not the case here where there was no misrepresentation at all. Only the lack of disclosing to the Patent Office what defendants now assert to be statutory bars, which are not bars, and which were never considered as such by plaintiff.

Whatever the standard of burden of proof -- preponderance of the evidence, to a reasonable certainty, or clear and convincing evidence -- defendants have dismally failed to meet it.

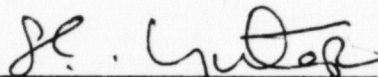
The January 13, 1976 Order denying attorneys fees should be affirmed.

CERTIFICATE OF SERVICE

This will certify that two copies of the foregoing Reply Brief of the Appellant with Answer on the Cross Appeal together with two copies of the Deferred Joint Appendix (Volumes I and II) were personally served this 2nd day of September, 1976 on the following:

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